WHAT IS CLAIMED IS:

1. A twist element (2) for a bearingless rotor, which is made predominantly of composite fiber material, having an essentially symmetrical, flattened cross section that has approximately the contour of a horizontal section through the center of a double cone.

2. The twist element (2) as recited in claim 1, characterized in that the cross section of the twist element is formed by two similar groups of webs (S1 to S6) situated laterally across from each other, whereby the webs (S1 to S6) of each similar group (S1 to S3 and S4 to S6) – starting from a shared thin root area (4) which forms a middle area of the cross section of the twist element and into which the webs (S1 to S6) of both groups open up – are separated from each other by narrow gaps (6) and arranged above each other, and the thickness of each of the webs (S1 to S6) increases towards the free lateral side edges of the twist element (2).

3. The twist element (2) as recited in one or more of the preceding claims, characterized in that the webs (S1 to S6) each have a wedge-shaped cross section whose tip opens up into the root area (4).

4. The twist element (2) as recited in one or more of the preceding claims, characterized in that the webs (S1 to S6), at least in the area of the lateral sides of the cross section of the twist element, have unidirectional reinforcement fiber packets (8) whose fibers run in the lengthwise direction (A) of the twist element (2).

5. The twist element (2) as recited in one or more of the preceding claims, characterized in that the unidirectional reinforcement fiber packets (8) extend to the outer contour of the cross section of the twist element.

6. The twist element (2) as recited in one or more of the preceding claims, characterized in that the fibers of the unidirectional reinforcement fiber packets (8) are carbon fibers.

7. The twist element (2) as recited in one or more of the preceding claims, characterized in that the webs (S1 to S6) are slit (10) at least once in the lengthwise direction of the twist element (2), the at least one slit (10) extending from a free lateral side edge of the cross section of the twist element towards the root area (4).

8. The twist element (2) as recited in one or more of the preceding claims, characterized in that the slits (10) are configured essentially rectilinearly and the individual slit longitudinal axes or their extensions intersect in the center point (A) of the cross section of the twist element or run through the root area (4) in the immediate vicinity of the mid-point (A).

9. The twist element (2) as recited in one or more of the preceding claims, characterized in that the at least one slit (10) of a web (S1 to S6) runs between at least two adjacent unidirectional reinforcement fiber packets (8).

10. The twist element (2) as recited in one or more of the preceding claims, characterized in that, in the immediate vicinity of its slit (10), each web (S1 to S6) has at least one reinforcement fiber fabric layer (12) that, starting from a lateral slit opening, runs in a U-shaped or loop-shaped manner around a slit base (10a) and around the slit contour situated within the web (S1 to S6) and that is situated between two adjacent unidirectional reinforcement fiber packets (8).

11. The twist element (2) as recited in one or more of the preceding claims, characterized in that two webs (S1, S6; S3, S4), which are arranged in pairs across from each other at the top and bottom of the cross section of the twist element, have at least one reinforcement fiber layer (14) that extends over the width of the appertaining web (S1; S3) and over the root area (4) continuously to the other, corresponding, opposite web (S6; S4) and over its width.

12. The twist element (2) as recited in one or more of the preceding claims, characterized in that the lateral side surfaces of the webs (S1 to S4) are inclined (α) with respect to the vertical center axis (V) of the cross section of the twist element above and below the horizontal center axis (H) of the cross section of the twist element.

13. The twist element (2) as recited in one or more of the preceding claims, characterized in that it is an integral part of a rotor blade, of a rotor blade connection element, of a rotor blade joining element or of a rotor head element.

14. A bearingless rotor, comprising at least one twist element (2) as recited in one of claims 1 to 13.

15. A rotorcraft, particularly a helicopter, comprising at least one bearingless rotor with at least one twist element (2) as recited in one of claims 1 to 13.